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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,443	01/20/2004	Larry S. Eoff	2001-IP-005267U1P1	9208
71/407 7590 ROBERT A. KENT P.O. BOX 1431 DUNCAN, OK 73536	12/23/2008		EXAMINER FIGUEROA, JOHN J	
			ART UNIT 1796	PAPER NUMBER
			NOTIFICATION DATE 12/23/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/760,443

Applicant(s)

EOFF ET AL.

Examiner

John J. Figueroa

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 77-79, 81-87, 107-112, 187, 188, 190-196 and 198-220 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 77-79, 81-87, 107-112 and 187, 188, 190-196 and 198-220 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :4/22/08; 6/5/08; 6/26/08; 9/03/08; 10/27/08.

DETAILED ACTION

Response to Amendment

1. The 35 U.S.C. 112, first paragraph, rejection of claims 77-79, 81-87, 107-112, 187, 188, 190-196, 198-205, previously made of record in item 6 on page 3 the Office Action dated April 3, 2008 (hereinafter 'OA') has been withdrawn in view of Applicant's amendment to the claims deleting the new matter from the claims that was objected to in the response to OA filed September 3, 2008 (hereinafter 'Response').
2. The 35 U.S.C. 102(b) rejection of claims 206-213 and 215-220 as anticipated by United States Patent Number (USPN) 4,532,052 to Weaver et al. (hereinafter 'Weaver') and by USPN 3,271,307 to Dickson et al. (hereinafter 'Dickson') has been maintained for reasons previously made of record in item 8 on page 4 of OA.
3. The 35 U.S.C. 102(b) rejections of claims 77-86, 88, 107-112, 187-195 and 197-203 as anticipated by Weaver that was previously made of record in item 1 on page 2 of the Final Office Action mailed August 8, 2007 (hereinafter 'FOA') has been reinstituted due to the removal of new matter from the claims as discussed above in paragraph #1 of the instant action and in accordance with item 9 on page 8 of OA.
4. The 35 U.S.C. 103(a) rejection of claims 210, 213 and 214 as unpatentable over Weaver in view of USPN 6,358,889 B2 to Waggenspack et al. (hereinafter 'Waggenspack') has been maintained for reasons previously made of record in item 9 on page 7 of OA. This rejection over claims 83, 86-88, 192 and 195-197 has been

reinstated due to Applicant's removal of new matter in Response as discussed *supra* in the instant action.

Claim Rejections - 35 USC § 112

5. Claims 77 and 187, and claims 78, 79, 81-87, 107-112, 188, 190-196, 198-203 204 and 205 that depend therefrom, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant has amended independent claims 77 and 187 to further contain a new limitation regarding the hydrophobically-modified water soluble polymer formed from "a polymerization reaction comprising a hydrophilic monomer and a hydrophobically-modified hydrophilic monomer." There is insufficient written description support for this limitation in the claims.

Response to Arguments

The 35 U.S.C. 112, First Paragraph, Rejection (item 6 of OA)

Applicant's arguments presented in Response regarding the captioned 35 U.S.C. 112, first paragraph rejection as to the claims containing new matter have been considered but deemed moot due to the withdrawal of this rejection in view of Applicant's amendment to the claims in Response deleting said new matter.

The 35 U.S.C. 102 Rejection over Weaver (item 2 of OA)

6. Applicant's arguments presented in Response regarding the captioned 35 U.S.C. 102 rejection as anticipated by Weaver have been fully considered but deemed unpersuasive.

Applicant's arguments concerning Weaver disclosing water-soluble polymers having branches that are hydrophobic in nature "increase water permeability" of a subterranean formation, whereas the "hydrophobically-modified water-soluble polymers" of the instant claims "reduce the permeability" of the formation, are not persuasive. Particularly, Applicant's reliance on the Table on columns 9 and 10 as patentably distinguishing the present claims from Weaver due to this table allegedly showing hydrophobically-branched polymers increasing water permeability in a formation is misguided.

Examiner respectfully draws Applicant's attention to col. 7, lines 26-30 and col. 9, lines 49-63 in Weaver disclosing the following:

"Of course, for applications altering aqueous fluid properties, such as altering fluid loss of a treatment or drilling fluids, the penetration of aqueous fluid and branched polymer should be a minimum or only a fraction of an inch. The polymer is preferably a branched organic polymer having a molecular weight of about 900-50,000,000 with a backbone chain having reactive sites on which a branch chain can be or has been attached with branched chains being attached to the backbone chain in a concentration of about 0.1-99% of said reactive sites. The branched organic polymer also contains a hydrophilic portion in a concentration sufficient **to produce the desired hydrophilic-hydrophobic balance** within the formation and to alter the hydrophilic characteristics in the formation. ...Thus, broadly speaking, one preferred application of this invention comprises one or more processes and polymer compositions for

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altering the surface characteristics of and/or fluid flow characteristics of a substrate or a formation which includes contacting said formation with a *highly branched organic polymer* which has an attaching portion and a modifying portion. The attaching portion of said polymer generally has ionic groups which establish the desired ionic bond or repulsion in the formation. *The modifying portion of said polymer has the hydrophilic-hydrophobic balance desired to produce the desired formation surface characteristics and/or interaction with fluids such as gelling and increasing or decreasing permeability to certain fluids.*"

That is, Weaver is teaching that fluid loss altering properties of the disclosed modified water-soluble polymers *are dependent on the hydrophilic/hydrophobic balance* of the modifying branches of the highly-branched water-soluble polymers. The table in col. 9-10 is showing that if said hydrophilic/hydrophobic *balance* of the modifying branches is hydrophobic, the resulting polymer would increase water permeability, whereas if the branches of the water-soluble polymer are, *in balance*, hydrophilic, it would decrease water permeability (if the polymer attaching unit is either anionic or cationic but not "nonionic").

Present independent claims 77 and 187 recite the water-soluble polymer to be "hydrophobically-modified" and "formed from a reaction comprising a hydrophilic polymer and a hydrophobic polymer". Accordingly, providing the terms in these claims their broadest possible interpretation, the present claims would read on a water-soluble highly branched cationic polymer having a hydrophilic backbone (e.g. chitosan) with numerous hydrophilic branches that has been modified by a hydrophobic compound (e.g., alkyl halide). The resultant polymer would be a "water-soluble hydrophobically modified polymer" containing a cationic hydrophilic backbone, numerous hydrophilic branches and a hydrophobic alkyl branch, thereby having a hydrophilic/hydrophobic

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balance that is **hydrophilic** in nature. Consequently, because this highly-branched, cationic polymer would be a "hydrophobically-modified water-soluble polymer" in accordance with the instant claims, but yet has a **hydrophilic** balance in terms of its hydrophilic-hydrophobic branch ratio, it would **decrease water permeability** in accordance with Weaver's teachings in the chart depicted on columns 9 and 10.

Thus, the claims, as amended, are anticipated by Weaver.

The 35 U.S.C. 103(a) Rejection over Weaver and Waggenspack (item 3 of OA)

7. Applicant's arguments presented in Response regarding the captioned 35 U.S.C. 103 rejection of claims 83, 86-88, 192 and 195-197 as unpatentable over Weaver in view of Waggenspack have been considered but deemed unpersuasive.

Applicant's sole argument in Response traversing this rejection is that Waggenspack does not cure the alleged "deficiencies" in Weaver. However, these arguments regarding the alleged deficiencies in Weaver were addressed above in the instant action and were found not persuasive.

Thus, the claims, as amended, are unpatentable over Weaver and Waggenspack.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571)272-8916. The examiner can normally be reached on Monday-Thursday 8:00-6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJF/RPG

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796